Helping European airports plan ahead for a successful HBS Standard 3 upgrade

European airports face one of their biggest challenges in recent times with the regulatory requirement for hold baggage screening equipment (HBS) to be upgraded to Standard 3. Not only is this upgrade costly, but the equipment is considerably larger than existing HBS standard 2 - requiring more space within already crowded baggage halls and facilities. Further, the replacement programme needs to be delivered within a live environment to minimise the disruption to passengers.

Babcock International Group has been supporting a number of UK airports, both large and small, with their upgrade programmes to meet the September 2018 deadline. As the rest of Europe looks to a deadline of September 2020, airports and operators have a small window of opportunity to learn from the UK experience and pull on the expertise and capability within the sector.

Critical upgrade

So how did Standard 3 come about? The vulnerability of European aircraft to terrorist attack changed from a threat to a reality with the Lockerbie disaster in 1988 and HBS Standard 1 regulations were introduced. Following the 11 September attacks, attention moved to explosive detection systems (EDS) and the European Civil Aviation Conference (ECAC) introduced its first EDS framework, involving three standards, with Standard 2 mandatory for all EDS installed from 1 January 2007.

Fourteen years on and, far from seeing the threat diminished, the aviation sector is working ever harder to mitigate the new generation of threats. ECAC’s Standard 3 applies to hold baggage screening systems (HBS), explosive detection systems (EDS), liquid explosive detection systems (LEDS) and security scanners).

Understanding the challenges

Whilst some airports have the necessary expertise to carry out the successful implementation, many do not. Indeed some have only recently upgraded to the Standard 2 machines and now face an even more challenging programme.

Certainly the equipment is more expensive to procure and maintain, and compounded by the space required to house the larger equipment - there is no opportunity for a straight swap out of the existing Standard 2. These are just the initial issues with additional costs where baggage halls have to be modified or rebuilt.

Bigger challenges come with the successful integration and interface within the existing baggage system in a live environment which can cause immense pressure on airport operators and their stakeholders. In addition to this, Standard 3 machines have shown lower throughput capabilities than the Standard 1 and 2 systems they replace – with the potential to impact passenger flow through the airport.

Planning for success

The planning around this upgrade cannot be underestimated. The complex programme requires a sizeable management structure with specific work streams to deliver its various elements. From our experience you need the participation of the entire project delivery team to identify solutions to logistical and technical challenges you’re likely to face on the way.
The upgraded solution needs to be tested rigorously before commissioning in order to mitigate risk of failure and improve reliability. In addition it’s important that you, or a selected solution provider, have a track record of delivery in very busy, and at capacity, live environments.

Communication and co-ordination is critical. Detailed planning and co-ordination should be carried out with all stakeholders to ensure that the project is delivered with no disruption to the terminals’ live operation.

Our approach

We recognise the large impact, both in terms of cost and disruption, which this upgrade can have on an airport. To support our customers we have developed a significant baggage system capability and experience, and are able to complete the majority of the project works around a HBS Standard 3 upgrade with our own internal resources. This helps to keep projects on track and in budget.

We look to minimise disruption to an airport’s operation through liaising closely with key stakeholders, including airport security staff and engineers, and creating detailed phasing plans that allows work to be completed in stages. This includes out of hours, when the system is switched off, or by putting in place temporary routing of bags to allow works to be completed without affecting operations. In addition, the early phases allow the concept, both for the construction methodology and for the technical solution, to be proven. Lessons learnt from these early works can then be fed into the design and methodology for the rest of the project.

As an independent systems integrator, we do not manufacture our own equipment and this allows us to focus on delivering the best system for our customer, based on their requirements, rather than simply selling equipment. Working with the customer, we can jointly select equipment to be integrated into the existing system, whichever original manufacturer equipment is in place, and use our capability to adapt and change code as needed.

In planning, we incorporate the selected HBS screening machines into the design scheme and co-ordinate this with steelwork design, structural modifications, and general building and services works to reduce the length of the project. As part of this, we invest a significant amount of time in modelling maintenance access strategies to ensure that EDS screening machines can be maintained in situ and removed for major overhaul without significant disruption to surrounding areas - reducing the cost of through-life support and future replacement works.

Fully tested and supported

As part of offsite or Factory Acceptance Tests, we use a customised emulation tool to test code, HBS machine interfaces and baggage equipment as if it were already integrated into the wider system. This ensures that tests are completed under operational conditions and that we are able to identify and address hidden issues before any works take place on site. Once live, we complete Site Acceptance Tests with reliability and confidence trials, ensuring the smooth running and integrity of the system.

As with all our airport transition projects, we supply ‘as-built’ and asset integration documentation in preparation for ‘go live’. As part of scoping a customer’s requirements, we consult with the handover team to identify the specific training needs of the operations and maintenance staff to ensure they have the correct levels of both technical and safety training.

A successful upgrade

Whilst European airports should not underestimate the work involved in upgrading to Standard 3, there is much to learn from the UK experience. Each airport will have its own specific requirements and challenges – however big or small. Planning is critical as is ensuring that you have the capability, either in-house or with a partner, to deliver the project from building works to the handover for the
operations and maintenance teams – causing minimum disruption to your operations and the passenger experience.

For more information about our experience in HBS Standard 3 replacement programmes and full baggage capability, please contact our team at airports@babcockinternational.com

Babcock will be exhibiting at inter airport Europe in Munich this October. Find us at Stand 1226 in Hall A5.